CLAIMS

This listing of claims will replace all previous version, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A centerbody for an exhaust system of a gas turbine engine, the centerbody comprising:

a forward portion, having first outer and inner surfaces, being adapted to be positioned such that exhaust gas flows along the first outer surface, the forward portion having at least one flap at a downstream end thereof, each flap being inclined toward the first outer surface such that a zone of local low pressure is induced in the exhaust gas flow downstream of each flap without significantly impeding the exhaust gas flow;

a tailcone having second outer and inner surfaces, the tailcone having a closed end and an open end, the tailcone being partially inserted into the forward portion, and at least part of the at least one flap overlaps an upstream portion of the open end;

a centerbody cavity defined by the first and second inner surfaces and by the closed end, the centerbody cavity containing gas at a pressure higher than the local low pressure; and

at least one opening defined between the forward portion and the tailcone, the opening being located immediately adjacent to said flap and upstream of one of the zones of local low pressure and providing fluid communication between the cavity and the exhaust gas flow;

whereby a ventilation flow out of the centerbody cavity through each opening is induced by a

positive difference between the pressure of the gas contained in the centerbody cavity and the local low pressure of the adjacent zone.

2. (original) The centerbody according to claim 1, wherein each flap induces a local low pressure by creating a vortex in the exhaust gas flow.

3. (original) The centerbody according to claim 1, wherein the at least one flap is a single continuous annular axisymmetric flap.

4. (original) The centerbody according to claim 1, wherein the open end of the tailcone is a continuous axisymmetric rim inclined toward the second inner surface.

5. (original) The centerbody according to claim 4, wherein the rim extends in a direction generally parallel to an engine centerline.

6. (original) The centerbody according to claim 5, wherein the rim is connected to a continuous axisymmetric edge extending toward the centerline.

7. (original) The centerbody according to claim 1, wherein the at least one flap is a single continuous axisymmetric flap and the open end of the tailcone is a continuous axisymmetric rim inclined toward the second inner surface.

8. (original) The centerbody according to claim 7, wherein a plurality of vanes extend between the flap and the rim.

9. (original) The centerbody according to claim 1, wherein the at least one flap is inclined relative to an engine centerline by an angle of approximately 30°.

10. (original) The centerbody according to claim 1, wherein the at least one flap has a length of about 0.5 inches.

11. (original) The centerbody according to claim 1, wherein a flowrate of the ventilation flow out of the at least one opening is equivalent to between 5 and 10 times a volume of the centerbody cavity per minute.

12. (currently amended) A method for ventilating a cavity of an exhaust centerbody of a gas turbine engine, the cavity containing gas and the centerbody directing an exhaust flow along an outer surface thereof, the method comprising the steps of:

providing at least one opening in the exhaust centerbody to permit fluid communication between the cavity and the exhaust flow;

inducing a local low pressure in the exhaust flow downstream of the at least one opening, without significantly impeding the flow, by using a flap formed in the centerbody ~~in proximity to~~ immediately adjacent each of the at least one opening; and

feeding ventilation air into the cavity, the ventilation air having a pressure greater than the local low pressure, such that a positive pressure differential between the pressure of the ventilation air within the cavity and the local low pressure induces a ventilation air flow out of the cavity through the at least one opening, thereby ventilating the cavity.

13. (original) The method according to claim 12, further including a step of selecting properties of the flap such that the flap induces a local low pressure by creating a vortex in the exhaust flow.

14. (original) The method according to claim 12, further comprising a step of selecting a length and angle of inclination of the flap to provide a ventilation air flow rate of between 5 and 10 times a volume of the cavity per minute.

15. (currently amended) A centerbody for the exhaust system of a gas turbine engine, the centerbody comprising:

depression means for inducing a local low pressure zone in an exhaust flow flowing along the centerbody;

a cavity defined within the centerbody, the cavity containing gas at a pressure higher than the local low pressure, creating a positive pressure differential between the gas within the cavity and the local low pressure; and

at least one opening in a wall of the centerbody, the opening providing fluid communication between the cavity and the exhaust flow, the at least one opening being located ~~in proximity to~~immediately adjacent said depression means and upstream of the local low pressure zone;

whereby the positive pressure differential induces a flow of the gas in the cavity out of the at least one opening to ventilate the cavity.

16. (original) The centerbody according to claim 15, further comprising first and second portions serially connected and defining the opening therebetween.

17. (original) The centerbody according to claim 16, wherein the depression means are integral with the first portion and overlap an upstream end of the second portion.

18. (original) The centerbody according to claim 17, wherein the end of the second portion includes a border inclined toward the cavity.

19. (original) The centerbody according to claim 18, wherein the border extends in a direction generally parallel to an engine centerline.

20. (original) The centerbody according to claim 15, wherein the flow of the gas out of the at least one opening has a flowrate of between 5 and 10 times a volume of the cavity per minute.